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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,177	08/21/2006	Achim Hilgers	DE 040054	1959

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EXAMINER
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DUONG, DIEU HIEN

ART UNIT	PAPER NUMBER
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2821

MAIL DATE	DELIVERY MODE
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11/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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**Office Action Summary**

Application No.

10/598,177

Applicant(s)

HILGERS, ACHIM

Examiner

Dieu Hien T. Duong

Art Unit

2821

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/10/07</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This Office Action is a response to applicants' Preliminary Amendment filed on August 21, 2006. In virtue of this amendment, claims 1-14 are currently in the instant application.

#### ***Priority***

1. Acknowledgement is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

#### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on January 10, 2007 in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is considered by the examiner.

If applicant is aware of any prior art or any other co-pending application not already of record, he/she is reminded of his/her duty under 37 CFR 1.97 to disclose the same.

#### ***Drawings***

3. The drawing submitted on August 21, 2006 is accepted as part of the formal application.

#### ***Specification***

4. The disclosure is objected to because of the following informalities:

In page 1 of specification, after the title, the paragraph - -This application is a National Stage Application of PCT application No. PCT/IB05/50634 filed February 22, 2005- - should be inserted.

Appropriate correction is required.

***Claim Objections***

5. Claims 2-6 and 8-14 are objected to because of the following informalities:

Claims 2-4, line 2, in front of "application" should be inserted "said";

Claims 2-6 and 8-11, line 1, "an antenna array" should be changed to -the antenna array- -;

Claim 6, line 3, in front of "application" should be inserted "said";

Claim 8, line 2, "a first antenna" should be changed to -said first antenna- -; "a second antenna" should be changed to -said second antenna- -;

Claims 12-14, line 1, "an" should be changed to -the- -;

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 8, the phrase "preferably a variable phase shifter" renders the claim indefinite because it is unclear whether the limitation following the phrase is part of the claimed invention. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 7-8 and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Tran (US 6,924,766 B2).

Regarding claim 1, Tran discloses, in Figure 1, an antenna array for operation in two ranges of application comprising a first (108) and second (110) antenna with which the positions of the resonant frequencies are different from each other, while these resonant frequencies lie between the two ranges of an application (col. 5, lines 1-4 and lines 6-9).

Regarding claim 7, Tran discloses, in Figure 3, an array antenna comprising a first (108) and a second (110) antenna which are arranged parallel to each other.

Regarding claim 8, as applied to claim 1, as best understood, Tran discloses, in Figures 1, 6 and col. 4, lines 11-12, comprising said first antenna (108) and said second antenna (110) and a driver circuit (116) comprising a power splitter (see col. 4, lines 11-12).

Regarding claim 12, Tran discloses, in Figure 1, a telecommunication device comprising said antenna array of claim 1.

Regarding claim 13, as applied to claim 1, the structures in Figure 1 and col. 4, lines 11-12 of Tran would enable the steps of a method for the operation of said antenna array wherein both antennas (108, 110) can be operated at the same time and a division of the power that is supplied to the respective antennas (108, 110) is executed by means of a power splitter (col. 4, lines 11-12).

Regarding claim 4, as applied to claim 1, the structures in Figure 6 of Tran would enable the steps of a method wherein the two antennas (108, 110) are operated with phase offset depending upon the desired radiation pattern.

10. Claims 1 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Okabe et al. (US 6,653,977 B1).

Regarding claim 1, Okabe discloses, in Figure 1, an antenna array for operation in two ranges of application comprising a first (101) and second (102) antenna with which the positions of the resonant frequencies are different from each other, while these resonant frequencies lie between the two ranges of an application (col. 4, lines 66-67 and col. 5, lines 1-10).

Regarding claim 9, as applied to claim 1, Okabe discloses, in Figure 3, the first antenna (121) and second antenna (122) being dielectric block antennas.

Regarding claim 10, as applied to claim 1, Okabe discloses, in Figure 3, the first antenna (121) and the second antenna (122) being arranged as surface mounted devices on a surface of a printed circuit board (200).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2-6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran (US 6,924,766 B2).

Regarding claims 2-4 and 6, Tran discloses every feature of claimed invention as expressly recited in claim 1, except for the transmission of the application being in the range from -20dB to -4dB, -20dB to -6dB, -20dB to -10dB or less than -2dB. However, such difference is not of patentable merits since it would have obvious to one having ordinary skill in the art in the time the invention was made to select the transmission of the application being in the range from -20dB to -4dB, -20dB to -6dB, -20dB to -10dB or less than -2dB to obtain a desired radiation characteristic and such modification has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranged involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 5, Tran discloses every feature of claimed invention as expressly recited in claim 1, except for the two ranges of the application having a distance of less than 200MHz. However, such difference is not of patentable merits since Tran discloses the first antenna with first electrical length and second antenna with second electrical length and the electrical length may be the same, different or

offset (see col. 5, lines 1-10). Therefore, it would have been obvious a matter of design choice to select the electrical length of the first and the electrical length of the second antenna to have the different distance between the two ranges being less than 200MHz and such modification would have been deemed level skill in the art.

Regarding claim 11, Tran discloses, in Figure 3, the first antenna and the second antenna being mounted at a distance (308).

Tran does not disclose the distance of maximum of 10 cm and minimum of 2 cm. However, such difference is not of patentable merits since it would have been obvious a matter of design choice to determine the specific distance between two antennas to be mounted to obtain a desired radiation characteristic such modification has been deemed level skill in the art.

### ***Inquiry***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu Hien T. Duong whose telephone number is 571-272-8980. The examiner can normally be reached on Monday - Friday, from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

11/20/07  
DD  
Art Unit 2821

*Douglas W. Owens* 11/23/07

DOUGLAS W. OWENS  
SUPERVISORY PATENT EXAMINER